

IS 11245 : 2004

(Reaffirmed 2015)

(Reaffirmed 2020)

भारतीय मानक

वातिल सिलिंडर — क्रय विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

**PNEUMATIC CYLINDERS — PURCHASE
SPECIFICATION**

(First Revision)

ICS 23.100.20

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BUREAU OF INDIAN STANDARDS

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NEW DELHI 110002

November 2004

Price Group 2

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Basic Fluid Power Sectional Committee had been approved by the Medical Instruments, General and Production Engineering Division Council.

In pneumatic fluid power systems power is transmitted and controlled through air or gas under pressure within a circuit. One component of such system is the fluid power cylinder. This is a device which converts piston power into linear mechanical force and motion. It consists of a movable element, that is a piston and piston rod, operating within a cylindrical bore.

This standard has been prepared to enable buyers to collect data as per their requirement from various manufacturers or suppliers for the purpose of comparison and subsequent collection.

This standard was first published in 1985. This revision has been made to bring the standard in line with the current practices prevalent in the industry as also to align it with the existing Indian Standards references of which are given in 2.

Indian Standard

PNEUMATIC CYLINDERS — PURCHASE SPECIFICATION

(First Revision)

1 SCOPE

This standard specifies the purchasing data of pneumatic cylinders.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
8208 : 1976	Sizes for cylinder bores and piston rod diameter for fluid power systems
10143 : 1995	Pneumatic fluid power — Single rod cylinder, 1 000 kPa (10 bar) series with detachable mountings, bores from 32 mm to 320 mm — Mounting dimensions (<i>first revision</i>)
10167 : 1982	Method for upsetting test on metallic materials
10411 : 1983	Recommendations on nominal strokes for fluid power cylinder
10416 : 1992	Fluid power systems and components — Vocabulary (<i>first revision</i>)
12723 : 1988	Pneumatic fluid power — Single rod cylinder — 1 000 kPa (10 bar) series — Bores from 8 mm to 25 mm — Mounting dimensions
12738 : 1995	Pneumatic fluid power — Single rod cylinders, 1 000 kPa (10 bar) series with integral mountings, bores from 32 mm to 250 mm — Mounting dimensions (<i>first revision</i>)
13086 : 1999	Pneumatic fluid power — Cylinders 1 000 kPa (10 bar) series — Rod end spherical eyes — Mounting dimensions (<i>first revision</i>)

*IS No.**Title*

13087 : 1999	Pneumatic fluid power — Cylinders 1 000 kPa (10 bar) series — Rod end clevis — Mounting dimensions (<i>first revision</i>)
14167 : 1994	Pneumatic cylinders — Acceptance test
14645 : 1998	Fluid power systems and components — Cylinders — Nominal pressure

3 DEFINITIONS

For the purpose of this standard, the definitions given in IS 10416 shall apply.

4 SIZES**4.1 Cylinder Bores**

The cylinder bores shall be as per 3.1 of IS 8208.

4.2 Piston Rod Diameter

The piston rod diameters shall be as per 3.2 of IS 8208.

4.3 Piston Stroke

The piston stroke(s) shall be as per 2.4 of IS 10411.

4.4 Mounting

For mounting dimensions for cylinders, reference shall be made to IS 10143, IS 12723, IS 12738, IS 13086 and IS 13087.

5 TESTING

For testing details of pneumatic cylinder, reference shall be made to IS 10167.

6 NAME PLATE

The cylinder shall be provided with a permanent name plate giving details as per A-15.

7 PROFORMA FOR PURCHASE SPECIFICATION

Proforma for purchase specification may be in accordance with that given in Annex A.

ANNEX A
(*Clauses 6 and 7*)

PROFORMA FOR PURCHASE SPECIFICATION FOR PNEUMATIC CYLINDERS

A-1 CYLINDER TYPE

Single acting/Double acting/Ram/Any other

Push in/Push out/Bellow type

Stroke adjustment: Yes/No

Length of adjustment (mm):

A-2 PROXIMITY SENSING REQUIRED

Yes/No

A-3 SIZES (mm)

Bore..... Rod..... Stroke..... Ram dia.....

A-4 RATINGS

A-4.1 Pressure, kgf/cm² : *Maximum* working pressure..... Rated pressure.....

A-4.2 Velocity, m/s : *Maximum* working speed.....

A-4.3 Number of cycles/minute.....

A-4.4 Temperature, °C : working temperature range: *Min*.....*Max*.....

A-5 MOUNTING

MF 8 Head rectangular flange (two hole)
mounting

MP 3 Cap mounting, fixed eye

MR 3 Head threaded mounting

MS 3 Head angle mounting

MF 1 Head mounting, rectangular flange

MF 2 Cap mounting, rectangular flange

MP 2 Cap mounting, detachable clevis

MP 4 Cap mounting, detachable eye

MS 1 Mounting with end angles

MT 4 Mounting with intermediate fixed or
movable trunnion (male)

MX 1 Mounting with studs or tie rods extended at
both ends

MP 1 Cap mounting, fixed clevis

MS 2 Mounting with side lugs

MT 1 Head mounting, integral trunnion (male)

MT 2 Cap mounting, integral trunnion (male)

MX 2 Cap mounting with studs or tie rods extended

MX 3 Head mounting with tie rods extended

Rod end spherical eyes

Rod end clevis

Any other (with dimensional drawing)

A-6 ROD END

Eye/Thread/Clevis/Lock nut/Any other (Specify)

A-7 LOAD DETAILS

A-7.1 Side load details, if any

A-8 CUSHIONING AND DECELERATION DEVICES

Specify.

A-9 ENVIRONMENTAL

Acid vapour/Dust/Hard particles/Mud/Water/Snow/Tropical/Vibration/Molten metal/Any other

A-10 PRIMER/PAINT

Specify.

A-10.1 Chemical Resistant Coating Required

Yes/No. If yes, specify.

A-11 SAFETY REQUIREMENTS

Specify.

A-12 SPECIAL REQUIREMENT

Tolerance/Tracking/Accuracy, etc.

A-12.1 Piston Rod Extension

Yes/No. If yes, specify.

A-13 TESTING REQUIREMENTS

Specify — Functional test/Leakage test/Cushioning test for integrity/Any other test.

A-14 SPACE CONSTRAINTS

Yes/No. If yes, specify.

A-15 NAME PLATE/PUNCHING/IDENTIFICATION DETAILS

Type..... Bore..... Rod..... Stroke..... Working pressure.....
 Port dimensions..... Overall length..... Manufacturer's reference number.....
 Year of manufacture..... Model label.....

A-16 PACKAGING

Specify.

Signature of the purchaser.....

Name of the purchaser.....

Name and address of the company.....

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This Indian Standard has been developed from Doc : No. MGP 14 (461).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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